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Statistical Bulletin

METROPOLITAN LIFE INSURANCE COMPANY

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Mortality of Medical Specialists*

LAST year the Metropolitan Life Insurance Company published the results of its study on the longevity and mortality of American physicians in the years 1938-1942†. The records have subsequently been analyzed further in order to determine how the mortality among medical specialists compares with that for physicians in general practice, and second, how the mortality varies among physicians in the several specialties. Of the 175,146 physicians in the American Medical Directory of 1940, no less than 37,010, or 21.1 percent of the total, were listed as full-time specialists.

The mortality among specialists at ages 35 to 74 years is only 78 percent of that for all male physicians at these ages; for nonspecialists the corresponding ratio is 110 percent. From these figures it is evident that the mortality of specialists, as a group, is about one third less than that of nonspecialists. The advantage of the specialist is somewhat greater before age 55 than after.

Several factors undoubtedly contribute to the favorable experience among specialists. In the first place, some self-selection may be exercised by those entering a specialty, inasmuch as a certain degree of physical well-being is required to continue studies over an extended period of years. Then, too, specialists on the whole probably have a larger income than the nonspecialists, and thus may be in a better position to take care of themselves by more frequent and longer vacations and by superior medical care. The specialists, concentrated in urban centers, have a further advantage in having accessibility to large hospital facilities and opportunities to consult with other specialists.

Each of the specialty groups made a better mortality record than the nonspecialists, although the margin between the two varied with the specific fields of practice. The pathologists seem to be the most favorably situated, with a mortality rate less than three fifths that among nonspecialists. Those practicing in

*This article is based upon the report, "Mortality of Medical Specialists, 1938-1942," by Louis I. Dublin and Mortimer Spiegelman. Journal of the American Medical Association, Vol. 137, pp. 1519-1524, August 21, 1948.

†"Longevity and Mortality of American Physicians, 1938-1942," by Louis I. Dublin and Mortimer Spiegelman. Journal of the American Medical Association, Vol. 134, pp. 1211-1215, August 9, 1947. This paper was summarized in August and October 1947 issues of the STATISTICAL BULLETIN.

TABLE 1—MORTALITY RATIO ACCORDING TO CAUSE AMONG MEDICAL SPECIALISTS AND NONSPECIALISTS AT AGES 35–74 YEARS: RATIO OF ACTUAL DEATHS TO THE DEATHS EXPECTED ON THE BASIS OF AGE-SPECIFIC DEATH RATES FOR ALL MALE PHYSICIANS, 1938–1942

CAUSE OF DEATH	MORTALITY RATIO		CAUSE OF DEATH	MORTALITY RATIO	
	All Specialists	Non-Specialists		All Specialists	Non-Specialists
ALL CAUSES	0.78*	1.10*	Pneumonia and influenza	0.65*	1.13*
Tuberculosis	0.56*	1.18*	Ulcer of the stomach or duodenum	0.61*	1.12
Syphilis	0.61	1.12	Appendicitis	0.78	1.07
Cancer, all sites	0.96	1.09*	Hernia and intestinal obstruction	0.65	1.16
of digestive organs	0.96	1.07	Cirrhosis of the liver	0.64*	1.11
of respiratory organs	0.97	1.00	Biliary calculi and other gall-bladder diseases	0.79	1.12
of genito-urinary organs	0.90	1.06	Diseases of the prostate gland	0.91	1.05
Leukemia	1.09	1.07	Suicide	0.76*	1.09
Diabetes mellitus	0.36*	1.20*	Automobile accidents	0.85	1.07
Cardiovascular-renal diseases	0.81*	1.08*	Other accidents	0.54*	1.16*
Diseases of the coronary arteries and angina pectoris	0.97	1.02	All other causes	0.68*	1.14*

*Significant in the statistical sense, that is, the probability is less than 5 in 100 that a deviation of the actual deaths from the expected deaths at least as great as that observed is a chance occurrence.

the field of dermatology or tuberculosis, on the other hand, made the poorest showing among the specialists, but even their mortality rate was only nine tenths that among nonspecialists.

The mortality is lower among specialists than among general practitioners not only for all causes combined but also for each of the major causes. The details appear in Table 1. The cardiovascular-renal diseases which account for more than three fifths of all the deaths among specialists at ages 35 to 74, show a mortality 81 percent of that among all physicians, or about the same ratio as for all causes combined; among nonspecialists, the ratio is 108 percent. For the diseases of the coronary arteries and angina pectoris, considered separately, however, the mortality for specialists is only a little better than that for the average physician. Apparently, whatever benefits specialization may bring, they are not great enough to overcome the tensions of medical practice. It is evident from Table 2 that of all the specialist groups, only internists and pediatricians show a mortality rate from coronary disease that is significantly lower than the average for all physicians.

The record for cancer likewise is only slightly better for specialists than for other physicians. This holds true not only for all forms of cancer combined, but for cancers of the digestive system, the respiratory organs, and the genito-urinary organs, separately. Only among general sur-

geons is the mortality from cancer well below that among nonspecialists. This advantage may be a consequence of their training in early recognition of the condition and hence in its early treatment. Roentgenologists, radiologists and dermatologists, on the other hand, have a high rate of mortality from cancer and leukemia, far above that for nonspecialists; this suggests strongly the effect of their exposure to dangerous radiations.

Specialists, as a group, have a much lower rate of mortality than nonspecialists from infectious conditions, such as tuberculosis, pneumonia, influenza, and syphilis. The specialists also fare comparatively better than nonspecialists in their mortality from ulcer of the stomach or duodenum, hernia and intestinal obstruction, cirrhosis of the liver, appendicitis, and diseases of the gall bladder. Even deaths from accidents, including automobile accidents, are relatively fewer among specialists than among non-specialists. Suicide also is appreciably less frequent among the specialists.

TABLE 2—MORTALITY RATIO, BY CAUSE, AMONG MEDICAL SPECIALISTS, ACCORDING TO SPECIALTY: RATIO OF ACTUAL DEATHS TO DEATHS EXPECTED ON THE BASIS OF AGE-SPECIFIC DEATH RATES FOR ALL MALE PHYSICIANS, AGES 35–74 YEARS, 1938–1942

SPECIALTY	MORTALITY RATIO						
	All Causes	Cardio-vascular-renal Diseases	Diseases of the Coronary Arteries and Angina Pectoris	Cancer	Pneu-monia and Influenza	Acci-dents	All Other Causes
ALL SPECIALISTS	0.78*	0.81*	0.97	0.96	0.65*	0.70*	0.67*
Surgery	0.81*	0.87*	1.00	0.81	0.55*	0.74	0.70*
Orthopedic surgery, proctology, urology, industrial surgery	0.86*	0.86	1.03	0.99	†	†	0.84
Anesthesia	0.88	0.97	†	†	†	†	†
Obstetrics and gynecology	0.75*	0.76*	1.08	0.95	†	†	0.55*
Ophthalmology, otology, laryngology, rhinology	0.75*	0.78*	0.93	0.90	0.66*	0.81	0.62*
Internal medicine and pediatrics	0.69*	0.73*	0.81	0.88	0.53*	0.41*	0.63*
Neurology and psychiatry	0.83*	0.81*	0.96	1.55*	†	†	0.54*
Roentgenology and radiology	0.90	0.89	1.10	1.33	†	†	0.84
Dermatology	0.98	0.90	1.31	†	†	†	1.01
Pathology	0.62*	0.64*	0.73	†	†	†	†
Public Health	0.83*	0.89	1.13	0.95	†	†	0.52*
Tuberculosis	0.99	1.14	1.24	†	†	†	†
Others, not specialists	1.10*	1.08*	1.02	1.09*	1.13*	1.11*	1.14*

*Significant in the statistical sense, that is, the probability is less than 5 in 100 that a deviation of the actual deaths from the expected deaths at least as great as that observed is a chance occurrence.

†Ratio not shown because fewer than 10 deaths were recorded in this category.

$244,000,000 Paid in Death Claims in 1947

THE Metropolitan Life Insurance Company paid death claims totaling more than $244,000,000 in 1947. The amounts paid on account of deaths from the principal causes are shown in the table on page 5.

Last year, for the first time, the Company paid more money on deaths from diseases of the coronary arteries and angina pectoris than from any other cause. Disbursements for these diseases amounted to almost $50,000,000, or to more than one fifth of the total. Chronic heart diseases, which heretofore had ranked first, was in second place, with payments not far from $45,000,000. The other two diseases in the cardiovascular-renal group — cerebral hemorrhage and chronic nephritis—were also near the top of the list, accounting for payments in excess of $19,000,000 and $10,000,000, respectively. Thus, somewhat more than one half of all claim disbursements last year were made on deaths from the cardiovascular-renal conditions. Ten years ago this group of diseases accounted for only 38.9 percent of the total.

Cancer is another disease which accounts for a large and growing proportion of the Company's annual death claim payments. In 1947, disbursements for deaths from this cause reached an all-time high of nearly $40,000,000, or almost twice the sum paid in 1937. The payments for cancer accounted for 16.2 percent of the total last year, as compared with 11.8 percent a decade earlier. Diabetes was responsible for 2.6 percent of the claim payments in 1947; the same share as in 1937. Disbursements for deaths ascribed to cirrhosis of the liver, however, increased in the decade from 1.2 percent to 1.6 percent.

At the same time that the diseases of middle and later life have been accounting for an increasing share of the disbursements, payments for the infectious diseases have been decreasing relatively. The amounts paid on deaths from tuberculosis, for example, dropped from 5.0 percent of all disbursements in 1937, to 2.8 percent in 1947. Even more striking is the record for influenza and pneumonia. The proportion of claim payments for these diseases decreased from 8.2 percent to 2.4 percent between 1937 and 1947; the amounts paid out dropped from more than $14,000,000 to less than $6,000,000. Much of the improvement in mortality from pneumonia in the past decade has resulted from the widespread use of the sulfa drugs and penicillin. The same means have also effected a marked decline in the deaths from appendicitis, syphilis, and the diseases incidental to childbearing.

The principal communicable diseases of childhood—measles, scarlet fever, whooping cough, and diphtheria—which even a decade ago accounted for only .2 percent of the death claim payments, in 1947 accounted for less than .05 percent of the total. Poliomyelitis is usually

responsible for about .1 percent of the Company's annual claim payments; the amount disbursed for this cause in 1947 was a little under $200,000, as compared with somewhat over $300,000 the year before, when the disease reached epidemic proportions in many areas.

Accidents continue to occupy a prominent place in the mortality picture. Last year the Metropolitan paid more than $21,500,000 in claims for deaths resulting from accidental injuries; more than $7,600,000 of this amount was paid on account of deaths from motor vehicle accidents alone. Payments for suicide were close to $4,500,000, and for homicide somewhat more than $1,000,000.

An interesting sidelight on the present report is that death claims*, totaling more than $4,000,000, were paid by the Company in 1947 on

*Exclusive of claims in the Group Division.

AMOUNTS DISBURSED ON ACCOUNT OF DEATHS FROM SELECTED CAUSES AND PERCENT OF TOTAL. ENTIRE EXPERIENCE OF THE METROPOLITAN LIFE INSURANCE COMPANY. ALL AGES. 1937, 1946, AND 1947 COMPARED

CAUSE OF DEATH	AMOUNT DISBURSED*			PERCENT OF TOTAL		
	1947	1946	1937	1947	1946	1937
ALL CAUSES—excluding war deaths	$244,250,000	$227,959,000	$173,063,000	100.0	100.0	100.0
Natural causes of death						
Diseases of the coronary arteries and angina pectoris	49,860,000	42,224,000	17,051,000	20.4	18.5	9.9
Chronic heart diseases†	44,682,000	43,297,000	29,469,000	18.3	19.0	17.0
Cancer—all forms	39,684,000	35,680,000	20,404,000	16.2	15.7	11.8
Cerebral hemorrhage	19,137,000	17,657,000	10,986,000	7.8	7.7	6.3
Chronic nephritis	10,396,000	10,576,000	9,940,000	4.3	4.6	5.7
Tuberculosis—all forms	6,871,000	7,583,000	8,720,000	2.8	3.3	5.0
Diabetes mellitus	6,256,000	6,052,000	4,499,000	2.6	2.7	2.6
Influenza and pneumonia	5,914,000	6,317,000	14,155,000	2.4	2.8	8.2
Cirrhosis of the liver	3,792,000	3,160,000	2,092,000	1.6	1.4	1.2
Ulcers of the stomach and duodenum	2,342,000	2,601,000	1,840,000	1.0	1.1	1.1
Syphilis	1,766,000	1,920,000	2,078,000	.7	.8	1.2
Appendicitis	1,063,000	1,092,000	3,341,000	.4	.5	1.9
Puerperal state—total	628,000	566,000	895,000	.3	.2	.5
Diarrhea and enteritis	350,000	356,000	360,000	.1	.2	.2
Acute poliomyelitis	195,000	304,000	104,000	.1	.1	.1
Communicable diseases of childhood	68,000	142,000	281,000	‡	.1	.2
Typhoid fever	51,000	41,000	183,000	‡	‡	.1
External causes—other than war deaths						
Suicide	4,435,000	3,909,000	4,051,000	1.8	1.7	2.3
Homicide	1,156,000	1,119,000	1,350,000	.5	.5	.8
Accidents—total	21,588,000	19,341,000	17,874,000	8.8	8.5	10.3
Motor vehicle accidents	7,624,000	6,753,000	8,315,000	3.1	3.0	4.8

*Includes additional accidental death benefits.
†International list (1940) titles 92, 93(c), (d), (e), and 95.
‡Less than 0.05 percent.

policies which had been in force less than one year. Of this amount more than $1,000,000 was paid on policies which had been in force less than three months. Death claim payments on policies of such short duration underscore the value of Life insurance.

Life Is Longest in Nebraska

LIFE tables computed by the Metropolitan Life Insurance Company for the geographic divisions of the United States and for each of the 48 States, have recently been published by the Federal government.* The facts for geographic regions were summarized in the July issue of the STATISTICAL BULLETIN; the present article gives details for the individual States.

The table on page 7 lists the States in decreasing order with respect to expectation of life at birth (average length of life) among white males. The first six States—Nebraska, South Dakota, Minnesota, Iowa, North Dakota, and Kansas—are all in the West North Central division. In each of these six top-ranking States, the average length of life in 1939-1941 was more than 65 years among white males and more than 69 years among white females.

In the highest ranking State, Nebraska, the average length of life was 66.25 years for white males, and 70.04 years for white females. These figures exceed by more than nine years the poorest records, namely, 56.83 years for white males in Arizona and 60.96 years for white females in New Mexico. These two States and Nevada (third from the bottom of the list) lie within the Mountain area, which as a unit showed up least favorably among the geographic divisions. The Mountain area, however, includes also Idaho, Utah, and Wyoming, all of which rank above the average for the country.

It is especially noteworthy that the industrial States of the North did somewhat better than average with respect to longevity among white males. Thus, as compared with the national average of 62.81 years, the figure for New York was 62.90 years, for Massachusetts 63.25 years, and for Michigan 63.45 years. Pennsylvania alone in this group fell below the national average, the expectation of life at birth for white males being 62.20 years. The southern States, with but few exceptions, ranked below the level for the country as a whole.

The ranking of the States according to expectation of life at age 40 tends to follow closely that according to expectation of life at birth. The same holds true for the mortality rates, shown on the right-hand side of the table. A striking feature of these data is the wide variation in the mortality rates for

*State and Regional Life Tables, 1939-1941. Federal Security Agency, Public Health Service, National Office of Vital Statistics, Washington, D. C., 1948.

the first year of life, ranging among white males from 36.30 per 1,000 in Oregon to 107.87 in New Mexico; the corresponding figures for white females were 27.53 and 88.96.

One is naturally led to inquire into the causes for the differences in longevity and mortality observed from State to State. It is, of course, difficult to disentangle the individual

EXPECTATION OF LIFE AND MORTALITY RATE PER 1,000 AMONG WHITE MALES AND WHITE FEMALES, AT BIRTH AND AT AGE 40, IN EACH OF THE UNITED STATES, 1939–1941

State	Expectation of Life, Years				Rank by Expectation of Life at Birth		Mortality Rate per 1,000			
	White Males		White Females				White Males		White Females	
	At Birth	Age 40	At Birth	Age 40	White Males	White Females	First Year of Life	Age 40	First Year of Life	Age 40
Nebraska	66.25	32.51	70.04	35.14	1	1	39.03	3.77	31.17	2.92
South Dakota	66.09	32.52	69.99	35.14	2	2	40.85	3.83	31.15	2.92
Minnesota	65.97	32.09	69.74	34.54	3	3	37.95	3.96	29.87	3.03
Iowa	65.81	32.18	69.70	34.89	4	4	41.86	3.97	32.13	2.99
North Dakota	65.71	32.38	69.31	34.60	5	7	46.73	3.73	37.25	2.62
Kansas	65.58	32.24	69.67	35.13	6	5	41.64	3.90	32.97	3.01
Wisconsin	65.22	31.54	68.75	33.88	7	9	41.44	4.08	32.37	3.21
Arkansas	64.24	32.01	67.96	34.81	8	18	47.83	4.93	39.64	3.80
Oregon	64.09	30.79	69.49	34.46	9	6	36.30	4.76	27.53	3.32
Connecticut	64.00	29.71	68.19	32.76	10	16	37.52	4.59	28.93	3.61
Oklahoma	63.87	31.69	68.32	34.93	11	13	50.85	4.78	40.74	3.49
Washington	63.62	30.51	68.95	34.03	12	8	40.09	5.02	28.32	3.54
Missouri	63.50	30.84	67.82	34.08	13	19	48.37	4.87	39.40	3.68
New Hampshire	63.48	30.09	67.54	33.18	14	22	44.31	4.68	40.07	3.74
Idaho	63.45	31.11	68.23	34.28	15	15	45.07	5.06	35.79	3.65
Michigan	63.45	30.25	67.36	32.89	16	25	44.76	4.69	34.94	3.69
Indiana	63.36	30.50	67.10	32.99	17	32	45.48	4.92	33.97	4.01
Delaware	63.33	29.79	67.32	32.89	18	28	41.69	4.54	34.13	3.51
Rhode Island	63.31	29.04	67.36	32.19	19	26	41.80	4.48	31.63	3.68
Massachusetts	63.25	29.30	67.62	32.55	20	21	41.22	5.19	31.53	3.58
Ohio	63.25	30.20	67.33	32.97	21	27	45.76	5.00	35.45	3.71
Utah	63.21	30.54	68.60	34.05	22	12	41.03	5.22	30.73	3.60
New Jersey	63.09	28.95	67.10	31.94	23	33	38.60	5.01	29.53	3.72
Vermont	63.05	30.07	66.99	32.95	24	36	49.60	4.62	39.17	4.06
Wyoming	62.90	30.60	68.09	34.20	25	17	45.86	4.72	36.57	3.62
New York	62.90	28.80	67.03	31.88	26	35	39.65	5.11	31.04	3.60
Illinois	62.86	29.38	67.46	32.72	27	23	39.50	5.39	30.30	3.66
UNITED STATES	**62.81**	**30.03**	**67.29**	**33.25**	**28**	**29**	**48.12**	**5.13**	**37.89**	**3.68**
Montana	62.69	30.14	67.69	33.80	29	20	43.51	5.46	36.45	3.79
Maine	62.62	30.63	66.44	33.12	30	40	59.46	4.40	45.08	3.63
Tennessee	62.48	30.81	66.76	33.76	31	38	55.63	5.53	43.60	4.04
Florida	62.39	30.21	68.65	35.20	32	11	48.95	5.84	41.31	3.47
North Carolina	62.32	30.26	67.28	33.62	33	30	56.54	5.31	44.01	3.70
Mississippi	62.26	30.43	67.17	33.75	34	31	53.48	5.06	42.63	3.80
Pennsylvania	62.20	29.02	66.24	31.92	35	44	47.19	5.37	37.44	4.01
District of Columbia	62.19	28.35	68.69	33.58	36	10	47.41	6.53	33.63	3.51
Maryland	62.00	28.71	66.86	32.42	37	37	45.97	5.66	36.87	3.51
California	61.90	29.00	68.27	34.13	38	14	43.52	6.15	34.87	3.77
Alabama	61.77	30.16	66.28	33.34	39	42	56.53	5.85	44.90	4.18
Georgia	61.72	29.52	67.46	33.98	40	24	54.42	5.66	42.78	3.99
West Virginia	61.71	30.78	66.00	33.33	41	46	60.83	5.94	48.61	4.55
Colorado	61.61	30.74	66.28	33.97	42	43	62.72	5.34	48.10	4.30
Kentucky	61.57	31.00	65.62	33.38	43	48	59.41	5.92	46.84	4.30
Virginia	61.28	29.71	66.73	33.31	44	39	58.39	5.63	45.83	3.63
Louisiana	61.18	28.89	67.09	33.21	45	34	52.07	5.67	41.23	3.57
Texas	61.07	30.60	65.96	34.55	46	47	68.22	5.29	55.84	3.93
South Carolina	60.01	28.50	66.12	33.02	47	45	61.46	6.38	47.89	4.10
Nevada	58.98	27.48	66.42	33.20	48	41	49.58	8.96	37.81	4.61
New Mexico	57.20	30.44	60.96	32.69	49	50	107.87	6.43	88.96	5.43
Arizona	56.83	27.93	63.74	33.58	50	49	82.62	8.63	66.74	5.15

factors which exert their influence. Economic and occupational characteristics are undoubtedly of prime importance. The agricultural States which enjoy relatively high standards of living are at the top of the list with respect to longevity. The essentially industrial States are clustered around the middle of the table. The relative position of the States is also partly determined by the proficiency of public health administration and the availability and quality of medical and hospital facilities.

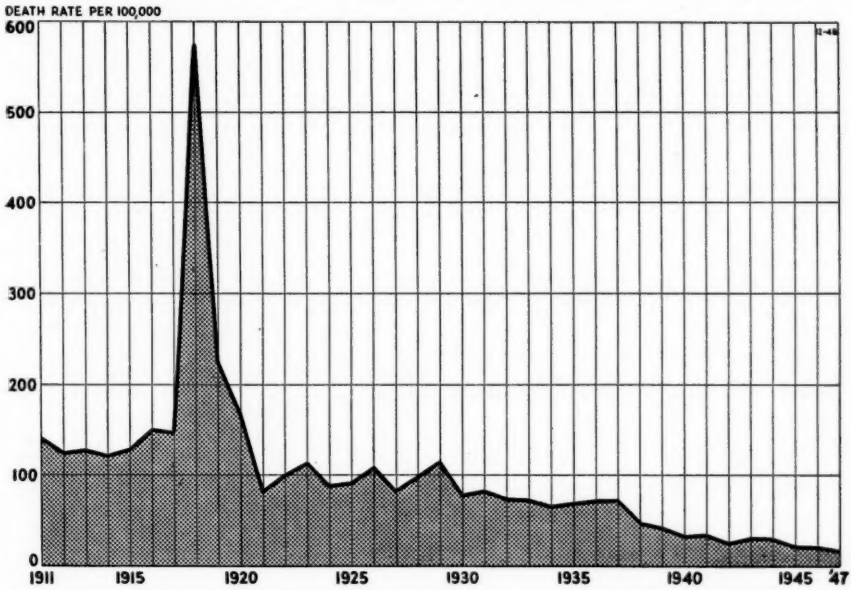
The comparison of life tables for the several States is subject to qualification because of interstate migration. The mortality among middle-aged and older people in California, for example, reflects not only the experience of those who have spent their lives in that State, but also of large numbers who had lived many years in other areas. In addition, a considerable number of those who have established residence in California and in other States of the West and Southwest, have done so in order to rehabilitate their health. The position of New Mexico and Arizona at the bottom of the table is due, in appreciable part, to the higher mortality of the Spanish-speaking population in the two States, and to the large numbers of health seekers who have moved in from other areas of the country.

Influenza and Pneumonia—Thirty Years After the Pandemic

THIRTY years ago, late in the summer of 1918, a world-wide epidemic of influenza struck the Atlantic seaboard and soon swept through the country, moving in a general westerly direction along the main lines of transportation. It is estimated that about 20,000,000 people in the United States were attacked, of whom 550,000 died of the disease or its complications. The explosive character of the outbreak is apparent from the chart on page 9, based on the experience among the Industrial policyholders of the Metropolitan Life Insurance Company. In 1918 the adjusted death rate from influenza and pneumonia among these insured (ages 1 to 74 years) was 575 per 100,000, or more than four times the average for the preceding seven years. During the last three months of the year, when the pandemic was at its height, the death rate from these diseases, on an annual basis, was more than 11 times the rate for the preceding 12-month period.

In the years since the pandemic, however, phenomenal progress has been made in reducing the mortality from influenza and pneumonia. A new era was inaugurated in the early 1930's, when specific serum treatment for many types of pneumonia was introduced. The death rate among these policyholders dropped from about 80 per 100,000 in 1930-

MORTALITY FROM PNEUMONIA AND INFLUENZA, 1911-1947
Metropolitan Life Insurance Company, Weekly Premium-Paying Business, Ages 1 to 74



NOTE—Annual death rates adjusted for changes in age, sex, and color composition of these policyholders.

1931 to about 70 per 100,000 in 1936-1937, during which period this type of therapy came increasingly into use. But just as the serum treatment was proving its worth in the battle against pneumonia, treatment with the sulfa drugs was introduced. In 1938, when both serum and the sulfa drugs were used, the death rate from pneumonia and influenza dropped sharply to 46.9 per 100,000 policyholders, a decrease of almost 35 percent from the year before. The continued improvement in sulfa drug treatment and the introduction of penicillin brought still further success. By 1947 the rate reached the all-time low of 17.4 per 100,000; the rate for the current year will probably fall still lower. The efficacy of the newer methods of treatment is clearly evident from the fact that the improvement in mortality has been relatively three times as great in the past decade as in the preceding one.

Both sexes and each age period shared in the reduction in mortality, as is evident from the table on the following page. Between 1935-1937 and 1947 the decrease was more than 60 percent for every age group among both white male and white female policyholders. At most ages, the reduction in the death rate was better than 75 percent.

Despite the striking success achieved in reducing the mortality

from influenza and pneumonia, the battle against these diseases is still far from won. There are forms of pneumonia, including virus pneumonia, which are as yet not amenable to any specific method of therapy. Moreover, there is no assurance that a devastating epidemic of influenza, similar to that 30 years ago, will not strike again. In the past, major outbreaks have occurred at intervals averaging about 25 or 30 years, although they have not recurred with the regularity of a cycle.

Fortunately, so far this year there are no signs of an influenza epidemic, either in the United States or elsewhere. This is unlike the situation in 1918, when months in advance of the pandemic serious outbreaks occurred in army camps and naval installations in our country. In Europe, too, there were outbreaks in the spring of 1918. But even if an influenza epidemic should occur, the medical and public health professions are much better prepared now than 30 years ago to meet the attack. Influenza, when uncomplicated, causes relatively few deaths, even during pandemics. Deaths occur very largely among cases complicated with a severe form of pneumonia. With the help of the sulfa drugs and penicillin, we should be able to control the complications, and thus rob the next pandemic, should it come, of most of its terror.

MORTALITY FROM INFLUENZA AND PNEUMONIA, WHITE MALES AND WHITE FEMALES BY AGE. METROPOLITAN LIFE INSURANCE COMPANY, WEEKLY PREMIUM-PAYING BUSINESS, 1925–1927 TO 1947

AGE PERIOD YEARS	AVERAGE DEATH RATES PER 100,000						PERCENT DECLINE			
	WHITE MALES			WHITE FEMALES			WHITE MALES		WHITE FEMALES	
	1947	1935–37	1925–27	1947	1935–37	1925–27	1947 Since 1935–37	1935–37 Since 1925–27	1947 Since 1935–37	1935–37 Since 1925–27
1 to 74*	21.0	77.5	101.0	11.6	51.1	71.7	73	23	77	29
1 to 4	25.2	90.6	163.8	26.2	80.5	144.2	72	45	67	44
5 to 9	3.8	20.2	24.2	3.5	16.9	23.0	81	17	79	27
10 to 14	2.9	11.7	13.6	2.2	11.9	15.6	75	14	82	24
15 to 19	3.8	18.0	25.7	2.4	13.7	20.2	79	30	82	32
20 to 24	3.3	22.0	29.8	2.4	17.7	24.4	85	26	86	27
25 to 34	6.0	38.7	48.6	3.6	28.6	35.5	84	20	87	19
35 to 44	13.9	81.4	110.0	7.9	40.4	54.6	83	26	80	26
45 to 54	34.6	143.6	181.7	12.8	64.3	86.6	76	21	80	26
55 to 64	85.1	257.1	298.1	32.4	143.4	200.2	67	14	77	28
65 to 74	172.1	445.2	533.5	92.9	360.0	468.0	61	17	74	23

*Death rates standardized on the basis of the Standard Million population of England and Wales, 1901.

CRUDE DEATH RATES* PER 100,000 POLICYHOLDERS FROM SELECTED CAUSES
INDUSTRIAL PREMIUM-PAYING BUSINESS—*Weekly and Monthly Combined*
METROPOLITAN LIFE INSURANCE COMPANY
AUGUST 1948

CAUSE OF DEATH	ANNUAL RATE PER 100,000 POLICYHOLDERS*				
	August 1948	August 1947	Year to Date: End of August		
			1948	1947	1946
ALL CAUSES—TOTAL	595.1	590.5	671.2	674.0	711.9
—Excluding war deaths	*595.0*	*590.2*	*671.0*	*673.3*	*695.5*
Typhoid fever	0.3	—	0.1	0.2	0.2
Measles	.2	.1	.7	.3	.9
Scarlet fever	—	.1	.1	.1	.2
Whooping cough	.2	.5	.4	.5	.6
Diphtheria	.1	.4	.2	.6	.6
Influenza	.6	.2	1.9	3.2	5.3
Pneumonia (all forms)	13.3	12.4	23.2	23.7	26.8
Tuberculosis (all forms)	26.9	29.0	27.7	31.7	35.3
Tuberculosis of respiratory system	24.7	26.2	25.2	28.5	31.8
Syphilis	5.2	6.6	6.5	7.0	7.4
Acute poliomyelitis	2.5	.6	.4	.3	.7
Cancer (all forms)	110.6	96.7	112.2	107.6	104.9
Diabetes mellitus	19.4	19.9	23.6	23.4	24.5
Principal chronic cardiovascular-renal diseases	265.9	262.0	318.6	314.6	316.1
Cerebral hemorrhage	52.5	53.7	60.9	61.0	61.8
Diseases of the coronary arteries and angina pectoris	64.3	59.1	77.8	71.9	65.7
Other chronic heart diseases†	119.5	119.2	145.8	145.0	150.0
Chronic nephritis	29.6	30.0	34.1	36.7	38.6
Diarrhea and enteritis	2.6	3.8	2.8	3.5	2.8
Appendicitis	2.2	2.7	2.6	3.0	3.4
Puerperal state—total	2.2	3.0	2.3	3.2	3.1
Suicide	5.4	7.0	6.9	6.8	7.3
Homicide	3.6	3.2	3.3	3.3	3.5
Accidents—total	43.9	45.8	40.1	42.2	47.2
Home accidents	8.1	6.0	9.7	9.5	10.2
Occupational accidents	5.3	4.5	4.6	4.9	4.6
Motor vehicle accidents	15.0	14.0	12.8	14.2	15.2
War deaths (enemy action)	.1	.3	.2	.7	16.4
All other causes of death	90.0	96.0	97.3	98.0	104.6

*The rates for 1948 are subject to slight correction, since they are based on provisional estimates of lives exposed to risk.

†International List (1940) titles 92, 93 (c), (d), (e), and 95.

NOTE—The death rates in this table differ from the rates previously published on the basis of the Weekly Premium-Paying Business alone.

Correspondence on the subjects discussed in these BULLETINS may be addressed to:

THE EDITOR,
STATISTICAL BULLETIN
Metropolitan Life Insurance Company
1 Madison Avenue, New York 10, N. Y.

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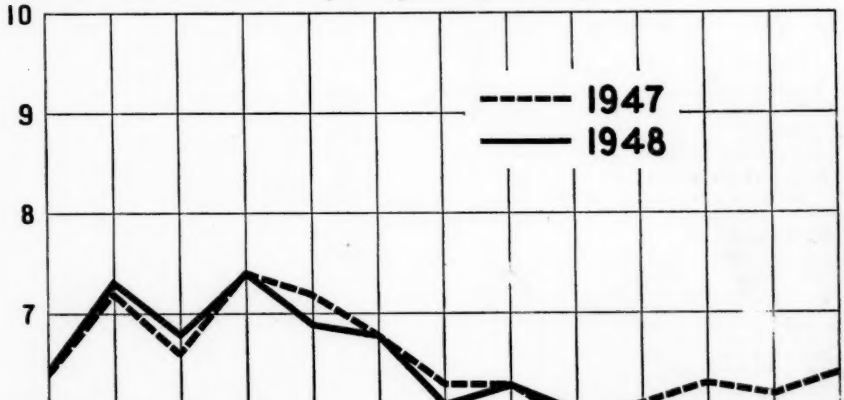
MORTALITY FROM ALL CAUSES

METROPOLITAN LIFE INSURANCE COMPANY • INDUSTRIAL PREMIUM-PAYING BUSINESS
WEEKLY AND MONTHLY COMBINED

DEATH RATES PER 1,000 ANNUAL BASIS (*1948 figures are provisional*)



(DEC)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1947	7.2	6.6	7.4	7.2	6.8	6.3	6.3	5.9	6.1	6.3	6.2	6
1948	7.3	6.8	7.4	6.9	6.8	6.1	6.3	6.0				

NOTE—The death rates in this chart differ from the rates previously published on the basis of Weekly Premium-Paying Business alone.

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